

Model PSMT

Portable Small Meter Tester

Technical Brief

APPLICATION: The Model PSMT Portable Meter Tester is designed for field testing of meters $\frac{1}{2}$ " – 1". Tests may be performed without removing the meter from service using a hose connection downstream of the meter. Additionally, adapters are provided for testing meters that have been removed from service.

BENEFITS OF FIELD TESTING METERS: Through routine testing of meters in service, change-out programs may be developed to aid in ensuring that the installed base of meters is providing accurate measurement to maximize revenue. Additionally, the PSMT may be used to demonstrate meter accuracy during customer inspections.

CONSTRUCTION: The PSMT is a self contained portable test meter with all control valves, hose connections, fittings, and pressure gauges permanently installed in a rugged plastic portable case. Accessories are included to allow various testing connections for a variety of meter sizes.

CASE: The PSMT is provided in a rugged weatherproof plastic case built to MIL-C-4150J specifications for long service life in harsh field conditions. The case may be closed and locked while the tester is in service in the event long-term evaluations are needed.

INTERNAL PIPING: All internal fittings are soldered brass or copper, except plastic tubing for pressure gauge. Connection to the test meter is made using standard meter connection fittings. A 2" pressure gauge is included to provide visual indication of water system pressure. The **INLET** control valve is a quick acting 1/4 – turn ball valve installed upstream of the meter to ensure accurate start and stop of the test. The **OUTLET** valve is a globe valve located downstream from the meter designed to allow reliable flow rate adjustment.

FIELD CONNECTIONS: External connection to the tester is made using standard $\frac{3}{4}$ " male hose connections located on the exterior of the case. Two $\frac{3}{4}$ " x 39" rugged reinforced flexible hoses are provided for field connection of the PSMT.

OPERATION: The test unit is connected downstream in series with the meter being tested using the hoses and adapters supplied. Ensure that all connections are watertight, that proper water disposal is provided, and then gradually open the supply. Partially open the **OUTLET** valve. Then open the inlet valve gradually, to purge all air from the **PSMT**, hoses, connections, and the **audited** meter. Then with the water running, set the desired flow test rate by regulating the **OUTLET** valve and timing the movement of the sweep hand on the **TEST METER**. With no flow present through the meters, set the test ring on the **TEST METER** dial to zero. Open the **INLET** valve to start the test flow. Close the **INLET** valve when the desired test volume is indicated on the **test meter**. After establishing the flow rate, the flow is stopped using the **INLET** valve. Before starting the test, the initial reading (including the test circle of the meter being tested) must be accurately recorded. Start the test by opening the **INLET** valve. When the test volume is indicated on the test meter, immediately close the **INLET** valve. Note the final reading on the test meter and the audited meter. Calculate the accuracy using the test meter reading as the reference. Tests should be conducted at three flow rates to have reliable overall accuracy information.

ACCESSORIES: Two $\frac{3}{4}$ " x 39" reinforced flexible hoses with swivel end connections. Fittings are provided for connection to 1/2", 5/8", 3/4" and 1" meters. A test ring is included to allow starting all tests at zero. Complete operating instructions are laminated inside the case cover.



SPECIFICATIONS

Operating Range	$\frac{1}{4}$ - 25 GPM (1.0 – 95 l/min)
Overall Accuracy	100% \pm 1.5%
Maximum Operating Temperature	105° F (40° C)
Maximum Operating Pressure	100 PSI (6.3 bar)
Register Type	Sealed Magnetic Drive
Units of Measure	Gallons or Cubic Feet
Test Resolution	0.1 Gallon, 0.01 Cubic Feet with Register Test Ring
Meter Size Test Capacity	$\frac{1}{2}$ ", 5/8", 5/8" x $\frac{3}{4}$ ", $\frac{3}{4}$ ", 1"
Connections	$\frac{3}{4}$ " x 39" Reinforced Flexible hose

CONSTRUCTION

Meter	Nutating Disc Engineering Thermoplastic
Case	Weatherproof, High-Impact Structural Copolymer Polypropylene. MIL-C-4150J
Overall Size	18 1/2" x 14 1/16" x 6 5 1/16"
Total Weight	10 lbs

PSMT-T-1

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Please see our website at
www.badgermeter.com
for specific contacts.



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